Commentary: Transdiaphragmatic omental flap without thoracotomy for bronchopleural fistula

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Chest computed tomographic scan with postlobectomy bronchopleural fistula (arrow).

Central Message

Transdiaphragmatic omental flap without thoracotomy is an option for selected patients with bronchopleural fistula after lung surgery.

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Historically, the incidence of bronchopleural fistula after lobectomy has been reported to be 1%.¹ A more modern series that was based on the large French database Epithor has reported an incidence of postlobectomy bronchopleural fistula of 0.5%.² Large minimally invasive lobectomy series have reported the incidence as varying from 0% to 0.6%.^{3,4} There are several possible treatment options for patients with postlobectomy bronchopleural fistula, but most commonly a muscle flap or an omental flap is used to obliterate the pleural space and reinforce the bronchial closure.⁵ Usually, a thoracotomy is required for muscle flaps, and a laparotomy (or laparoscopy) and a thoracotomy are required for the omental flap. Patients with bronchopleural fistula are often sick and debilitated, and they may not tolerate a thoracotomy well.

In this issue of the *Journal*, David and colleagues⁶ present the case of a patient who had a bronchopleural fistula develop as a result of complete dehiscence of the bronchial stump after a robotically assisted right lower lobectomy. As is often the case, this was a patient with multiple comorbidities, including synchronous head and neck cancer, coronary artery disease, and diabetes. In this case, the patient was clinically well, and the postlobectomy cavity was relatively clean. David and colleagues⁶ performed a laparotomy and created an omental flap that was based on the right gastropiploic arcade. The diaphragm was then incised (phrenotomy), and the omentum was placed through the diaphragmatic defect into the thoracic cavity, where it completely filled the postlobectomy cavity and sealed the bronchial stump. The diaphragm was then stitched to the omentum to close the gap. The patient did well, and bronchoscopy 14 months later showed a closed bronchial stump.

The approach of David and colleagues⁶ to postlobectomy bronchopleural fistula is courageous, because the potential for future diaphragmatic hernias is unknown. It may, however, benefit patients who are very sick and might not

tolerate a major thoracic procedure. In the reported case, David and colleagues⁶ used the transdiaphragmatic flap for a lower lobe fistula, and it is likely that this approach would be more difficult for fistulas occurring after upper lobectomies. In addition to the potential for a diaphragmatic hernia, there is a theoretic risk of contaminating the peritoneal cavity if the pleural cavity is contaminated. In the reported case, the pleural cavity was clean, but often it is not. We believe that some caution is merited, because it is unknown how safe and how effective this procedure will be in a larger and more varied patient population. This may, however, be an attractive approach in the treatment of selected patients with lower lobe bronchopleural fistula.

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